

Table 1. mRNAs that increase or decrease ≥ 4 -fold after HCMV infection

| Actin/Tubulin/Myosin | | Kinase/Phosphatase | | |
|--|--|----------------------------|---|---|
| X06956 | alpha-tubulin | 24h, 6X | U | 3 |
| R59199 | est = X79535 - beta tubulin | 24h, 4X | U | 3 |
| Z24277 | tropomyosin isoform | 24h, 4X | D | 3 |
| T92451 | est = M12125 - tropomyosin | 24h, 5X | D | 3 |
| X05276 | fibroblast tropomyosin TM30 (p1) | 24h, 4X | D | 3 |
| T60155 | est = J05192 - alpha-actin (ACTA) | 24h, 11X | D | 3 |
| M19283 | gamma-actin | 24h, 4X | D | 3 |
| X54163 | cardiac troponin I | 24h, 5X | D | 3 |
| H44011 | myosin heavy chain | 8h, 5X | D | 3 |
| T55741 | est = X85337 - myosin light chain kinase (MLCK) | 24h, 6X | D | 3 |
| X53416 | actin-binding protein (filamin) (ABP-280) | 24h, 5X | D | 1 |
| T97948 | neutral calponin | 24h, 15X | D | 3 |
| Cell Cycle | | Lamins | | |
| L49231 | retinoblastoma susceptibility protein (RB1) | 24h, 12X | U | 3 |
| X59798 | PRAD1 mRNA for cyclin | 24h, 9X | D | 3 |
| D13891 | Id-2H | 8h, 24h, 6-7X | D | 3 |
| L13698 | gas-1 (growth-arrest-specific gene) | 8h, 24, 6-15X | D | 1 |
| X62048 | Wec1 | 8h, 24h, 4-5X | D | 3 |
| H50438 | est = M81934 - cdc25B | 8h, 4X | D | 3 |
| U09477 | 33BP1 p53-binding protein | 8h, 5X | D | 3 |
| Coagulation | | Ligands and Receptors | | |
| R16659 | est = L27624 and ACD002076 - TEP1-2 | 24h, 8X | U | 1 |
| M59499 | lipoprotein-associated coagulation inhibitor | 8h, 6X | D | 3 |
| M14083 | beta-migrating plasminogen activator inhibitor 1 | 24h, 4X | D | 3 |
| J02933 | blood coagulation factor VII gene | 24h, 5X | D | 3 |
| Complement | | Transforming Growth Factor | | |
| M31516 | decay-accelerating factor (DAF) | 8,24h, 4-5X | U | 1 |
| T54547 | est = M84526 - adipon/ complement factor D | 24h, 7X | D | 3 |
| T69603 | est = M14058 - complement clr component | 24h, 4X | D | 3 |
| R12676 | est = M65292 - 1.4-kb mRNA of complement factor H | 40', 4X | D | 3 |
| Cytokines/Receptors | | Beta | | |
| M21121 | trans | 8h, 6X | U | 2 |
| M29150 | Interleukin 6 | 8h, 10X | U | 3 |
| X58377 | Interleukin-11 (IL-11) | 8,24h, 4-11X | U | 1 |
| M29696 | Interleukin-7 (IL-7) receptor, alpha chain | 24h, 4X | U | 1 |
| U02020 | pre-B cell enhancing factor (PBEF) | 8h, 24h, 4X | U | 3 |
| T61446 | A20 | 8h, 4X | U | 3 |
| L35263 | CSaids binding protein (CSBP1) | 8h, 7X | D | 3 |
| M58286 | tumor necrosis factor receptor | 8h, 24h, 4-5X | D | 1 |
| H14506 | est = L36034 - pre-B cell stimulating factor | 24h, 4X | D | 1 |
| X72012 | endoglin | 8h, 23X | D | 3 |
| Extracellular Matrix and Cell Adhesion | | Growth Factor | | |
| L36531 | integrin alpha 8 subunit | 40', 6X | U | 3 |
| M80244 | E16, an integral membrane protein | 40', 4X | U | 3 |
| X14787 | thrombospondin 1 (TSP1) | 24h, 21X | D | 1 |
| L12350 | thrombospondin 2 (TSP2) | 24h, 13X | D | 3 |
| X05231 | collagenase | 40',8h, 4-7X | D | 3 |
| L25285 | collagen alpha-1 type XV (COL15A1) | 24h, 13X | D | 3 |
| J03464 | collagen alpha-2 type I | 24h, 14X | D | 3 |
| M11718 | collagen alpha-2 type V | 24h, 8X | D | 3 |
| M34570 | collagen alpha-2 type VI | 24h, 6X | D | 3 |
| T51558 | est = K01228 - procollagen alpha I(I) chain | 24h, 6X | D | 3 |
| X06700 | pro-alpha(I)III collagen | 24h, 16X | D | 1 |
| L16895 | lysyl oxidase, an extracellular copper enzyme | 24h, 4X | D | 3 |
| X53743 | fibulin-1 C - a secreted glycoprotein | 40',8,24h,5-7X | D | 3 |
| U34976 | gamma-sarcoglycan, a dystrophin-associated protein | 24h, 6X | D | 3 |
| U14394 | Tissue inhibitor of metalloproteinases-3 (TIMP3) | 24h, 6-8X | D | 3 |
| R32771 | est = U37791 - rasi-1 matrix metalloproteinase | 8h, 24h, 5-9X | D | 3 |
| U03877 | extracellular protein (S1-5) | 24h, 4X | D | 3 |
| L34056 | cadherin-11 | 24h, 9X | D | 3 |
| GTP Binding Proteins | | GDP | | |
| H67367 | est = D38076 - RanBP1 (Ran-binding protein 1) | 24h, 5X | U | 3 |
| T93295 | est: homo. of L20294-mouse GTP-binding protein | 24h, 4X | U | 3 |
| X75593 | rab 13 | 24h, 9X | D | 3 |
| R53966 | est = Z222641 - a2-chimera | 24h, 8X | D | 3 |
| H19201 | est: homo. to mouse L07924 - gua. nucl. disso. stim. | 8h, 9X | D | 3 |
| Heat Shock and Stress-Inducible Proteins | | GDP | | |
| R08183 | est = X75821, U07550 - chaperonin 10 | 24h, 8X | U | 3 |
| T66307 | heat shock 70kDa protein 1 | 24h, 11X | U | 3 |
| M86752 | transformation-sensitive protein | 24h, 8X | U | 3 |
| L08069 | heat shock protein, E. coli DnaJ homologue | 8h, 4X | U | 3 |
| H55758 | est = M14328 alpha enolase | 24h, 15X | U | 3 |
| T93272 | est = M62829 early growth response protein 1 | 8,24h, 5-6X | U | 1 |
| T51856 | est: homo. to stress-inducible chaperone mt-GpE#1 | 24h, 4X | U | 3 |
| X79066 | ERF-1 | 8h, 4X | D | 3 |
| Interferon | | GDP | | |
| M24594 | interferon stimulated genes 54K (issg54K) | 8h,24h, 5-19X | U | 2 |
| M87434 | 71 kDa 2'S' oligoadenylate synthetase | 8h, 6X | U | 2 |
| X02875 | (2'-5') oligo A synthetase E (1.8 kb RNA) | 8h,24h, 6-15X | U | 2 |
| X02874 | (2'-5') oligo A synthetase E (1.6 kb RNA) | 8h, 8X | U | 2 |
| M87284 | 69 kDa 2'S' oligoadenylate synthetase | 8h, 8X | U | 2 |
| X02530 | gamma-interferon inducible early response gene | 8h,8h, 34X | U | 1 |
| L05072 | interferon regulatory factor 1 (IRF-1) | 24h, 7X | U | 2 |
| X15949 | interferon regulatory factor-2 (IRF-2) | 8h, 5-12X | U | 2 |
| X67325 | interferon-alpha inducible gene, p27 gene | 24h, 7-28X | U | 2 |
| H05300 | interferon-induced guanylate-binding protein 1 | 8h,24h, 9-27X | U | 2 |
| M55542 | guanylate binding protein isoform II | 8h, 9X | U | 2 |
| D31887 | KJAA0062 (cig19) | 8h,24h, 3-4X | U | 2 |
| X82200 | interferon inducible gene stat50 | 24h, 14X | U | 1 |
| X02492 | interferon-induced protein 6-16 | 8h,24h, 4-5X | U | 2 |
| R34698 | interferon-induced protein 9-27 | 8h,24h, 3-6X | U | 2 |
| M13755 | interferon-induced 17-kDa/15-kDa protein | 8,24h, 55-260X | U | 2 |
| M28622 | interferon beta | 8h,24h, 10-31X | U | 2 |
| X17668 | indoleamine 2,3-dioxygenase | 8h,24h, 9-140X | U | 1 |
| M33882 | MXA | 8h,24h, 5-118X | U | 2 |
| M30818 | MxB | 8h,24h, 23-53X | U | 2 |
| X56841 | HLA-E gene | 8h,24h, 3-19X | U | 1 |
| T50250 | est: homo. to U51904, mouse IFN α -treated mRNA | 24h, 32X | U | 1 |
| M60618 | nuclear autoantigen Sp100 | 8h,24h, 4-16X | U | 2 |
| M73778 | PML-1 | 8h,24h, 3-6X | U | 2 |
| Actin/Tubulin/Myosin | | Kinase/Phosphatase | | |
| R39857 | est = X97630 - serine/threonine protein kinase EMK | 24h, 4X | U | 3 |
| H02889 | est = Y11366 IMPA gene | 24h, 8X | U | 3 |
| U25994 | cell death protein (RIP protein kinase) | 8h, 4X | U | 1 |
| D21209 | protein tyrosine phosphatase (PTP-BAS, type 1) | 8h,24h, 4-6X | D | 1 |
| X72728 | HYL tyrosine kinase | 24h, 8X | D | 1 |
| R60908 | est = X74764 - receptor protein tyrosine kinase | 24h, 21X | D | 1 |
| H65441 | est = U78027, L35265 - Bruton's tyrosine kinase | 24h, 7X | D | 3 |
| X16416 | proto-oncogene tyrosine-protein kinase (abl) | 24h, 4X | D | 1 |
| Lamins | | Lamins | | |
| M55210 | laminin B2 chain | 24h, 4-8X | D | 3 |
| X79683 | b1a2 laminin | 24h, 4-5X | D | 3 |
| R43734 | S78569 - laminin alpha 4 chain | 24h, 6X | D | 3 |
| T55218 | est = M13452 or M13451 - lamin A or C | 8h, 26X | D | 3 |
| Ligands and Receptors | | Ligands and Receptors | | |
| L13744 | TK3 orphan receptor | 8,24h,6-46X | U | 1 |
| U12767 | mitogen induced nuclear orphan receptor | 8h, 5X | U | 3 |
| M77140 | pro-galanin | 24h, 20X | U | 1 |
| M63888 | heparin-binding growth factor receptor | 24h, 9X | U | 3 |
| T70920 | est = M88279 - immunophilin (FKBP52) | 24h, 8X | U | 3 |
| M20132 | androgen receptor (AR) | 8h, 4X | D | 3 |
| M19481 | folistatin | 24h, 6-15X | D | 1 |
| T16662 | est = M14118 - insulin-like growth factor (IGF-II) | 24h, 4X | D | 1 |
| M35878 | insulin-like growth factor-binding protein-3 | 24h, 4X | D | 1 |
| M65062 | insulin-like growth factor-binding protein-5 | 8h,24h, 4-12X | D | 1 |
| M35410 | insulin-like growth factor binding protein 2 | 40',8h, S \pm 11X | D | 1 |
| X04434 | insulin-like growth factor I receptor | 40',8h, 4-24X | D | 1 |
| L07594 | transforming growth factor-beta type III receptor | 8h,24h, 4-6X | D | 1 |
| M21574 | platelet-derived growth factor receptor alpha | 8h,24h, 12-25X | D | 1 |
| H88938 | est = M60828 M25295 - keratinocyte growth factor | 8h, 4X | D | 1 |
| X62381 | activin receptor, growth factor-like receptor | 8h, 6X | D | 1 |
| R45296 | est = U67784 - orphan G protein-coupled receptor | 24h, 6X | D | 1 |
| X02157 | fetal erythropoietin | 24h, 4X | D | 1 |
| M64497 | apolipoprotein AI regulatory protein (ARP-1) | 8h, 4-5X | D | 1 |
| L11708 | 17 beta hydroxysteroid dehydrogenase type 2 | 24h, 7X | D | 1 |
| L00352 | low density lipoprotein (LDL) receptor | 8h,24h, 5-6X | D | 1 |
| M10065 | apolipoprotein E | 40',8h, 7-26X | D | 1 |
| Prostaglandin Synthesis | | Prostaglandin Synthesis | | |
| U04636 | cyclooxygenase-2 (cox2) | 8h, 7X | U | 1 |
| M72393 | cytosolic phospholipase A2 (cPLA2) | 8h,24h, 7-12X | U | 1 |
| X05908 | lipocortin | 24h, 9X | D | 1 |
| D38145 | prostacyclia synthase | 24h, 4X | D | 1 |
| Protein Degradation | | Protein Degradation | | |
| T56244 | est = D26599 - proteasome subunit HsC7-I | 24h, 6X | U | 1 |
| T54276 | proteasome subunit LM7 (allele LMP7C) | 8h, 4X | U | 1 |
| T92259 | proteasome component IOTA chain | 24h, 5X | U | 1 |
| D00762 | proteasome component HC8 | 24h, 6X | U | 1 |
| D00760 | proteasome component C3 | 24h, 5X | U | 1 |
| H05893 | 26S proteasome subunit p97 | 24h, 4X | U | 1 |
| L02426 | 26S protease (S4) regulatory subunit | 24h, 16X | U | 1 |
| M91670 | ubiquitin carboxyl protein (E2-EPF) | 24h, 4X | U | 1 |
| R67921 | est = D55696 - putative cysteine protease | 8h, 4X | U | 1 |
| T56256 | est = U26057 - ubiquitin protease proto-oncogene | 8h, 4X | D | 1 |
| J03589 | ubiquitin-like protein (GdX) | 24h, 7X | D | 1 |
| T50500 | est = Z22658 - a placental thrombin inhibitor (PTI) | 24h, 4X | D | 1 |
| Proto-oncogenes | | Proto-oncogenes | | |
| X89985 | BCL7B gene | 8h,24h, 5-10X | U | 1 |
| H48122 | est = U43746, breast cancer susceptibility (BRCA2) | 8h, 4X | U | 1 |
| M83751 | arginine-rich protein (ARP) | 24h, 11X | U | 1 |
| M27903 | pim-1 proto-oncogene | 24h, 16X | U | 1 |
| T53138 | est = Y11306 - HICF-4 | 8h, 4X | D | 1 |
| X16416 | proto-oncogene tyrosine-protein kinase (abl) | 24h, 4X | D | 1 |
| D43969 | AML1C protein | 8h,24h, 4-7X | D | 1 |
| X82209 | MNI | 8h,24h, 4-7X | D | 1 |
| Splicing Factors | | Splicing Factors | | |
| X13482 | U2 small nuclear ribonucleoprotein A' | 24h, 4X | U | 1 |
| M15841 | U2 small nuclear RNA-associated B" | 24h, 4X | U | 1 |
| R41349 | splicing factor, arginine/serine-rich 7 (SFRS7) | 24h, 10X | U | 1 |
| Transcription Factors | | Transcription Factors | | |
| R55041 | est = J03161 - serum response factor (SRF) | 24h, 5X | U | 1 |
| H46624 | est: homology to mouse AB012276 - ATF4 | 8h, 4X | U | 1 |
| M97676 | homeobox protein (HOX7) | 8h, 4X | U | 1 |
| R26139 | est = X59268 - TFIIB | 8h, 8X | U | 1 |
| M69043 | MAD-3, encodes an I kappa B-like protein | 8h,24h, 6-10X | U | 1 |
| R26146 | NF-kB p105 subunit | 24h, 4X | U | 1 |
| U09825 | acid finger protein (AFP) | 8h,24h, 5-8X | U | 1 |
| H88261 | est = U90304 Iroquois-class homeodomain protein | 8h, 4X | U | 1 |
| X03348 | beta-glucocorticoid receptor | 8h,24h, 4X | D | 1 |
| M83667 | NF-IL6-beta protein | 8h, 4-6X | D | 1 |
| X57435 | transcription factor AP-4 | 8h,24h, 4X | D | 1 |
| M36711 | sequence-specific DNA-binding protein (AP-2) | 8h, 6X | D | 1 |
| Y00345 | polyA binding protein | 24h, 5X | D | 1 |
| R39209 | est = X56544 - MBP-2 for MHC binding protein 2 | 24h, 5X | D | 1 |
| L19872 | aryl hydrocarbon receptor (AhR) | 8h,24h, 4-8X | D | 1 |
| Translation Factors | | Translation Factors | | |
| R72300 | est = U17969 - translation initiation factor eIF-5A | 24h, 149X | U | 1 |
| H04333 | est = U49436 - translation initiation factor 5 (eIF5) | 24h, 4X | U | 1 |
| T69446 | est = D13748 - initiation factor 4A-1 (eIF-4A1) | 24h, 36X | U | 1 |
| L18960 | translation initiation factor (eIF-4C) | 24h, 39X | U | 1 |
| H01943 | eukaryotic initiation factor 4E (eIF-4E) | 24h, 4X | U | 1 |
| X62570 | IFP53, tryptophanyl-tRNA synthetase | 8h,24h, 6-800X | U | 1 |
| M81592 | gamma-glutamyl carboxylase (hGC) | 24h, 5X | U | 1 |
| Z12830 | SSR (signal-sequence receptor) alpha subunit | 24h, 5X | U | 1 |
| R60357 | alanyl tRNA synthetase | 8h, 5X | D | 1 |
| D31762 | K1A0057 gene - homolog of TRAMP | 24, 8X | D | 1 |
| Miscellaneous | | Miscellaneous | | |
| M34551 | 52k autoantigen in Ro/SSA ribonucleoprotein compl. | 8h,24h, 4-12X | U | 1 |
| U33238 | chromosome 16p11.2 gene - homolog of LIG | | | |

| | | | | |
|--------|---|-----------------|---|---|
| M22349 | neuron-specific gamma-2 enolase | 24h, 6X | U | 3 |
| M24470 | glucose-6-phosphate dehydrogenase | 8h, 24h, 4-14X | U | 3 |
| T47964 | purine nucleoside phosphorylase | 24h, 8X | U | 1 |
| U07681 | NAD(H)-specific isocitrate dehydrogenase α subunit | 24h, 9X | U | 3 |
| R42235 | est = X56452 - CYP2C gene for cytochrome P450 | 24h, 6X | U | 1 |
| H53120 | est = D12676 - lysosomal integral glycoprotein | 24h, 4X | U | 3 |
| J00123 | enkephalin gene | 24h, 8X | U | 3 |
| H28131 | est = M64784 - platelet 6-phosphofructokinase | 24h, 20X | U | 3 |
| R42244 | est = X57522 - antigen peptide transporter 1 | 24h, 6X | U | 3 |
| R26294 | est = AF017732 - chromosome 2 cosmids | 24h, 4X | U | 3 |
| L25270 | XE169 | 24h, 4X | U | 3 |
| U01833 | a putative nucleotide-binding protein | 24h, 7X | U | 1 |
| H72850 | est = X56351 5 - aminolevulinate synthase | 8h, 24h, 4X | U | 3 |
| U29195 | neuronal pentraxin II (NPTX2) | 24h, 7X | U | 3 |
| U19523 | GTP cyclohydrolase I | 8h, 24h, 4X | U | 1 |
| H03980 | est = AB001106 - glia maturation factor | 24h, 5X | U | 3 |
| L19779 | histone H2A.2 | 8h, 24h, 6-7X | U | 3 |
| Z29678 | mitF | 24h, 4-8X | D | 3 |
| X69978 | ERCC5 excision repair protein | 8h, 5X | D | 3 |
| X65024 | keroderma pigmentosum group C compl. factor | 24h, 4X | D | 3 |
| R60318 | est = AF022813 - tetraspan (NAG-2) | 24h, 28X | D | 3 |
| H87106 | est = AF043906 - T245 protein (T245) | 24h, 4X | D | 3 |
| U14650 | platelet-endothelial tetraspan antigen 3 | 24h, 23X | D | 3 |
| L13385 | Miller-Dieker lissencephaly protein (LIS1) | 24h, 4X | D | 3 |
| L35263 | CSAids binding protein (CSBPI) | 8h, 7X | D | 3 |
| D10522 | 80K-L protein - a major substrate for protein kinase C | 8h, 24h, 4-8X | D | 1 |
| J02814 | chondroitin sulfate proteoglycan core protein | 24h, 6X | D | 3 |
| X75090 | HLA-DR associated protein I (P(HAPl) | 8h, 4-8X | D | 3 |
| U08092 | histamine N-methyltransferase (HNMT) | 8h, 4X | D | 3 |
| D14874 | adrenomedullin | 8h, 24h, 14-18X | D | 1 |
| H80262 | est = X15422 - mannose-binding protein C | 24h, 8X | D | 3 |
| R88575 | est = US5017 M86521 - transketolase (TKT) | 24h, 5X | D | 1 |
| M13994 | cytosolic aldehyde dehydrogenase (ALDH1) | 24h, 5-7X | D | 1 |
| M22324 | aminopeptidase N/CD13 mRNA | 24h, 4X | D | 3 |
| M12996 | glucose-6-phosphate dehydrogenase (G6PD) | 24h, 5X | D | 1 |
| T52343 | est = Y00433 - glutathione peroxidase | 24h, 4X | D | 3 |
| T64167 | est = dihydrodiol dehydrogenase isozyme DD2 | 8h, 24h, 4-21X | D | 3 |
| X58022 | corticotropin-releasing factor binding protein | 24h, 4X | D | 3 |
| U03688 | dioxin-inducible cytochrome P450 (CYP1B1) | 8h, 24h, 4-11X | D | 3 |
| H67764 | est = U55764 - estrogen sulfotransferase | 24h, 5-12X | D | 3 |
| D00137 | class I alcohol dehydrogenase beta-1 subunit | 8h, 5X | D | 3 |
| M77836 | pyrrolidine-5-carboxylate reductase (EC 1.5.1.2) | 24, 15X | D | 3 |
| T57002 | est = M29038 - stem cell protein (SCL) | 24h, 4X | D | 3 |
| D13665 | est = D13665 - osteoblast specific factor 2 (OSF-2p1) | 24h, 7X | D | 3 |
| M22490 | bone morphogenic protein-2B (BMP-2B) | 8h, 4X | D | 3 |
| M95787 | 22kDa smooth muscle protein (SM22) | 24h, 5X | D | 3 |
| Z11559 | iron regulatory factor (IRF) | 8h, 24h, 5X | D | 3 |
| T63612 | ferritin heavy chain | 8h, 4X | D | 3 |
| T72863 | est = M10119 - ferritin light subunit | 24h, 287X | D | 3 |
| R56881 | est = U61166 - Xenopus laevis intersettin homolog | 8h, 4-5X | D | 3 |
| T63052 | est: homolog of <i>M. musculus</i> X52102 | 24h, 5X | U | 3 |
| D14663 | KIAA0107 gene | 24h, 4X | U | 3 |
| R61352 | est = D42085 KIAA0095 gene | 24h, 6X | U | 3 |
| U16954 | AF1q | 24h, 5-7X | U | 3 |
| R98335 | est = L13744 AF-9 (unknown function) | 8h, 4-5X | U | 3 |
| R01072 | est: unknown | 24h, 5X | U | 3 |
| R10664 | est: unknown | 24h, 5-7X | U | 3 |
| H24245 | est: unknown | 24h, 4-5X | U | 3 |
| H11036 | est: unknown | 24h, 6X | U | 3 |
| R42152 | est: unknown | 24h, 7X | U | 3 |
| R74454 | est: unknown | 8h, 24h, 4X | U | 3 |
| R54359 | est: unknown | 24h, 10X | U | 1 |
| R01124 | est: unknown | 24h, 15X | U | 3 |
| R56443 | est: unknown | 24h, 7X | U | 3 |
| T70251 | est: unknown | 40, 8h, 4X | D | 3 |
| H92205 | est: unknown | 8h, 4X | D | 3 |
| T89666 | est: unknown | 8h, 4X | D | 3 |
| H13281 | est: unknown | 24h, 15X | D | 3 |
| R60741 | est: unknown | 8h, 4X | D | 3 |
| H16597 | est: unknown | 24h, 4X | D | 3 |
| R40403 | est: unknown | 24h, 6X | D | 3 |
| H78404 | est: unknown | 8h, 4X | D | 3 |
| T48692 | est: unknown | 8h, 24h, 6X | D | 1 |
| H40677 | est: unknown | 8h, 6X | D | 3 |
| H86071 | est: homology to mouse AF003234 | 8h, 5X | D | 3 |